

PE MOCK MATHEMATICS MARKING  
FOR MBALE CITY - 2024.

QN	SOLUTION	MARIO	COMMENT										
1.	<p>(I) <math>18 \div 3 = \underline{\underline{6}} \checkmark</math></p> <p>(II) <math>\begin{array}{r} 06 \\ 3 \overline{) 18 } \\ 0 \times 3 = \underline{0} \\ \hline 18 \\ 6 \times 3 = \underline{18} \\ \hline 00 \end{array}</math></p> <p>(III) <math>\begin{array}{r} 6 \\ 3 \overline{) 18 } \\ = \underline{\underline{6}} \checkmark \end{array}</math></p> <p>(IV) <math>18 - 3 = 15 - 1^{\text{st}}</math>  <math>15 - 3 = 12 - 2^{\text{nd}}</math>  <math>12 - 3 = 9 - 3^{\text{rd}}</math>  <math>9 - 3 = 6 - 4^{\text{th}}</math>  <math>6 - 3 = 3 - 5^{\text{th}}</math>  <math>3 - 3 = 0 - 6^{\text{th}}</math>  <math>\therefore 18 \div 3 = 6 \checkmark</math></p>	B <sub>2</sub>	6 from For correct division.										
2.	<p>(I) <math>909044 = \text{Nine hundred}</math>  <math>\text{nine thousand, forty four. } \checkmark</math></p> <p>(II) <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="padding: 2px;">Thousands</td> <td style="padding: 2px;">Units</td> </tr> <tr> <td style="padding: 2px;">9</td> <td style="padding: 2px;">4</td> </tr> <tr> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="padding: 2px;">9</td> <td style="padding: 2px;">4</td> </tr> <tr> <td style="padding: 2px;">0</td> <td style="padding: 2px;">4</td> </tr> </table></p> <p>Nine hundred nine thousand,  forty four. <math>\checkmark</math></p> <p>(III)</p> <p><math>909000 - \text{Nine hundred nine}</math>  <math>9000 \text{ thousand}</math></p> <p style="margin-left: 40px;"> <math>+ \quad 40 - \text{Forty}</math>  <math>4 - \text{four}</math> </p> <p><math>\underline{909044} = \text{Nine hundred}</math>  <math>\text{nine thousand}</math>  <math>\text{forty four.}</math></p>	Thousands	Units	9	4	0	0	9	4	0	4	B <sub>2</sub>	for correct writing in  Reject Wrong Sp.  Under hr error
Thousands	Units												
9	4												
0	0												
9	4												
0	4												

(2)

mark

common

an

## SOLUTION

3.

①

$$\frac{3}{4} \div 1\frac{1}{2}$$

(1)  $\frac{3}{4} \div \frac{3}{2}$   
 $\text{LCM} = 4$

$$\frac{3}{4} \div \frac{3}{2}$$

$$\frac{3}{4} \times \frac{2}{3}$$

$$\frac{3}{2} \times \frac{1}{3}$$

$$\frac{1 \times 1}{2 \times 1}$$

$$\frac{1}{2}$$


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$$\frac{3}{4} \div \frac{3}{2}$$

$$\frac{3 \times 4}{4} \div \frac{3 \times 2}{2}$$

$$3 \times 1 \div 2 \times 3$$

$$\frac{3 \times 1}{2 \times 3}$$

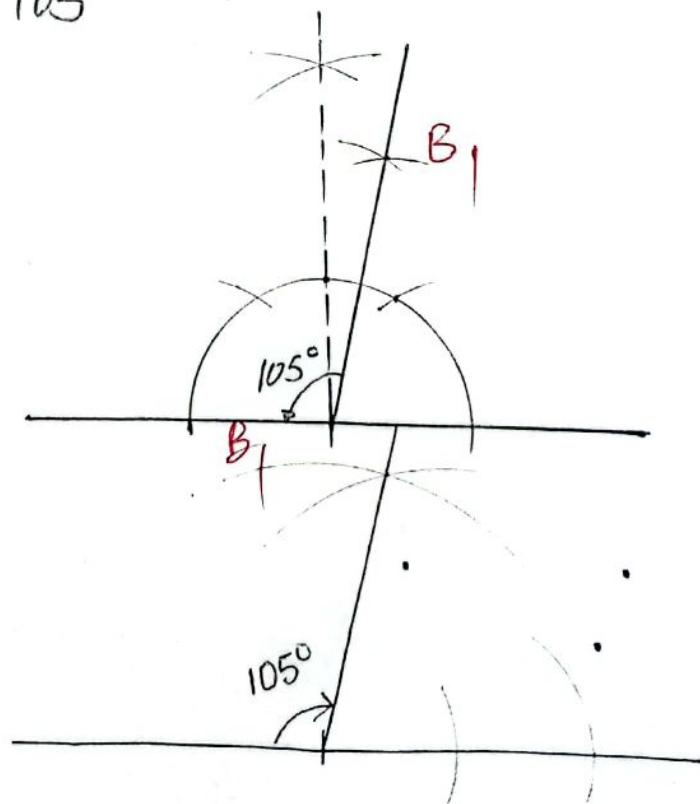
$$\frac{3}{6}$$

$$\frac{1}{2}$$


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M<sub>1</sub>for the curr  
methodA<sub>1</sub>for  $\frac{1}{2}$ 

4.

 $105^\circ$ 

(3)

Qn	SOLUTION	mark	comment
5	<p>(i) <math>1\text{km} = 1000\text{m}</math></p> $0.48\text{km} = (0.48 \times 1000)\text{m}$ $\left( \frac{48}{100} \times 1000 \right) \text{m} \checkmark$ $\underline{480\text{m}} \checkmark$	M <sub>1</sub>	for 480m
			<u>Reject</u>
			+ wrong units
(ii)	$1\text{km} = 1000\text{m}$ $0.48\text{km} = 0.48 \times 1000 \text{m} \checkmark$ $\underline{480.00\text{m}}$ $480\text{m.} \checkmark \text{(A1)}$	(M1)	
6.	<p>(i) <math>\frac{2}{1} + \frac{1b}{3} = 4</math></p> $3 \times \frac{2}{1} + \frac{b}{3} \times 3 = 4 \times 3 \checkmark$ $6 + b = 12$ $6 - 6 + b = 12 - 6$ $b = 6 \checkmark$	M <sub>1</sub>	for multiplying by the LCM.
		A <sub>1</sub>	for 6.
(iii)	$2 + \frac{1b}{3} = 4$ $2 + \frac{b}{3} = 4$ $2 - 2 + \frac{b}{3} = 4 - 2$ $\frac{b}{3} = 2$ $3 \times \frac{b}{3} = 2 \times 3 \checkmark$ $\underline{b = 6 \checkmark \text{(A1)}}$		

Qn

SOLUTION

$$7. \textcircled{i} (0.65 \times 144) + (56 \times 0.65)$$

$$0.65(144+56)\checkmark$$

$$\frac{65}{100} \times 200$$

$$130\checkmark$$

$$\textcircled{ii} (144+56) \frac{65}{100} \checkmark \textcircled{M_1}$$

$$200 \times \frac{65}{100}$$

$$130\checkmark \textcircled{A_1}$$

 $M_1$ 

For Correct

 $A_1$ 

For 130

Reject

$$(0.65 \times 144) + (56 \times 0.65)$$

$$\left(\frac{65}{100} \times 144\right) + \left(\frac{56}{100} \times 65\right)$$

$$\frac{936\phi}{10\phi} + 3$$

$$\begin{array}{r} 93.6 \\ 36.4 \\ \hline 130.0 \end{array}$$

8.

\textcircled{i} Sh 30 000 buy 5 pens

$$\text{Sh 1 buys } \frac{5}{30000} \text{ pens}$$

$$\text{Sh 48000 buys } \frac{5}{30000} \times 48000$$

$$8 \text{ pens} \checkmark$$

More Pens

$$8 - 5 = 3 \text{ more pens}$$

$B_1$  for 8 pens

$B_1$  for 3 more pens

\textcircled{ii}.

$$\frac{1}{5} \times \text{sh } 48000$$

$$\text{Sh } 30000$$

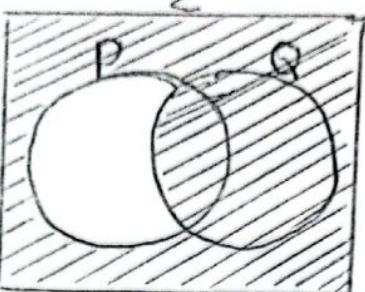
$b_1$

$$= 8 \text{ pens} \checkmark$$

More pens

$$8 - 5 = 3 \text{ more pens}$$

(5)

Qn	SOLUTION	mark	comment
9 (i)		B <sub>2</sub>	For the correct shading

10 (ii) Let the fraction be  $y$

$$y = 0.\overline{72} \dots$$

$$100xy = 0.\overline{72}7272\dots \times 100 \checkmark$$

$$\begin{array}{r} 100y \\ - y \\ \hline 99y = 72.0000 \end{array}$$

$$\frac{99y}{99} = \frac{72}{99}$$

$$y = \frac{8}{11} \checkmark$$

M<sub>1</sub> For correct method

A<sub>1</sub> For  $\frac{8}{11}$

Reject

$\frac{72}{99}$

$\frac{24}{33}$

(ii)  $0.\overline{72}$

$$= \frac{72}{100-1} \checkmark \text{ (M<sub>1</sub>)}$$

$$\frac{72}{99}$$

$$\frac{8}{11} \checkmark \text{ (A)}$$

Qn

## SOLUTION

MATH

Common

11. Mean =  $\frac{\text{Sum of data}}{\text{No. of data}}$

M<sub>1</sub>

For correct method

$$\frac{2x+3+4+2x+4x-3}{4}$$

A<sub>1</sub>

For 2x + 1

$$\frac{2x+2x+4x+3+4x-3}{4}$$

$$\frac{8x+7-3}{4}$$

$$\frac{8x+4}{4}$$

$$\frac{\frac{2}{3}x}{4} + \frac{4}{4}$$

$$2x+1 \checkmark$$

Reject

$$\frac{2}{3}x+4$$

$$2x+1 \text{ A.O}$$

12.

$$\frac{1}{2}bh$$

$$\frac{1}{2}xyxy = 32 \text{ cm}^2$$

B<sub>1</sub>

For 8 cm

$$2 \times \frac{y^2}{2} = 32 \text{ cm}^2 \times 2$$

B<sub>2</sub>

For 28 cm

$$= 64 \text{ cm}^2$$

$$\begin{array}{r} 2 | 64 \\ 2 | 32 \\ 2 | 16 \\ 2 | 8 \\ 2 | 4 \\ \hline & 1 \end{array}$$

$$= \sqrt{64 \text{ cm}^2}$$

$$\sqrt{xy} = \sqrt{(2 \times 2) \times (2 \times 2) \times (2 \times 2) (\text{cm})} = \sqrt{4}$$

$$y = 2 \times 2 \times 2 \text{ cm}$$

$$y = 8 \text{ cm} \checkmark$$

$$P = b + h + l$$

$$P = 8 \text{ cm} + 8 \text{ cm} + 12 \text{ cm}$$

$$P = 16 \text{ cm} + 12 \text{ cm}$$

$$P = 28 \text{ cm} \checkmark$$

(7)

Ques	Solution	Mark	Comment
13.	$\textcircled{1} \quad y = \frac{\text{LCM} \times \text{GCF}}{\text{1st no.}}$ $y = \frac{180 \times 9}{30} \checkmark$ $y = 18 \times 3$ $y = 54 \checkmark$	M <sub>1</sub>	For correct working
		A <sub>1</sub>	For 54
11.	$\text{1st no.} \times \text{2nd no.} = \text{LCM} \times \text{GCF}$ $30 \times y = 180 \times 9$ $30y = 180 \times 9$ $\frac{30y}{30} = \frac{180 \times 9}{30} \checkmark \text{ M}_1$ $y = 54 \checkmark \text{ A}_1$		
14.	<p>Base interior ls of an isosceles <math>\triangle</math> are equal.</p> $(4P - 20^\circ) = (2P + 50^\circ) \checkmark$ $4P - 20^\circ = 2P + 50^\circ$ $4P - 20^\circ + 20^\circ = 2P + 50^\circ + 20^\circ$ $4P = 2P + 70^\circ$ $4P - 2P = 2P - 2P + 70^\circ$ $2P = 70^\circ$ $\frac{2P}{2} = \frac{70^\circ}{2}$ $P = 35^\circ \checkmark$	M <sub>1</sub> A <sub>1</sub>	For the correct equation For $35^\circ$ . Follow through

SOLUTION							MAR 14	Comments
18n		M	T	W	Th	F	S	S
15	(i)	1	2	3	4	5	6	7
		8	9	10	11	12	13	14 ✓
		15	16	17	18	19	20	21
		22	23	24	25	26	27	28
	(29)							
		<u>It is on Monday ✓</u>						
	(ii)	$1 + (29 - 1) = -(\text{finite } 7) \quad M_1$						
		$1 + 28 = -(\text{finite } 7) \quad M_1$						
		<del><math>\frac{29}{7}</math></del> $\frac{4 \text{ rem } 1}{7}$						
		$1 (\text{finite } 7)$						
		<u>1 rep. Monday ✓(A1)</u>						
	(iii)	$1 + (29 - 1) = -(\text{finite } 7) \quad M_1$						
		$1 + \frac{28}{7} = -(\text{finite } 7) \quad M_1$						
		$1 + 0 = 1 (\text{finite } 7)$						
		<u>1 rep. Monday ✓(A1)</u>						
	(iv)	$29 - 1 = 28 \quad M_1$						
		<del><math>\frac{28}{7}</math></del> $\frac{4 \text{ rem } 0}{7}$						
		$1 + 0 = 1 (\text{finite } 7)$						
		<u>Its Monday</u>						

(7)

Qn	SOLUTION	MARK	COMMENT
16	$s = D \div T$ $s = 180 \text{ km} \div 2\frac{1}{2} \text{ h} \checkmark$ $s = 180 \text{ km} \div \frac{5}{2} \text{ h}$ $s = 180 \text{ km} \times \frac{2}{5} \text{ h}$ $s = 72 \text{ km/h} \checkmark$	M <sub>1</sub>	for correct substitution
17	$c = \pi d$ $c = \frac{22}{7} \times 70 \text{ cm}$ $c = \underline{\underline{220 \text{ cm}}} \checkmark$ $1 \text{ Km} = 100000 \text{ cm}$ $22 \text{ Km} = 22 \times 100000 \text{ cm}$ $= 2200000 \text{ cm}$	B <sub>1</sub>	for 220cm for 10000 revolution <u>Reject</u> 10000 cm 10000 Km
18	$\text{No of Rev} = \frac{\text{Distance}}{\text{Circumference}}$ $\frac{100000}{2200000 \text{ cm}}$ $\frac{100000}{220 \text{ cm}}$ $10000 \text{ revolution} \checkmark$		

Ques	Answer	Mark	Comments
19	Solutions	18 ✓	<p>b<sub>1</sub>) for the corner Complete gutter</p> <p>b<sub>2</sub>) for 18</p>
19		19 ✓	<p>Result for guttering and not fitted in the space/gap given</p>

20  $\sqrt{x} = 4 \quad \sqrt{y} = 9$

$$\sqrt{x}^2 = 4^2, \quad \sqrt{y}^2 = 9^2$$

$$4 \times 4 = 16 \quad 9 \times 9 = 81$$

$$x - y$$

$$16 - 81 \checkmark$$


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$$- 65 \checkmark$$

$$(\sqrt{x})^2 = 4^2 \quad (\sqrt{y})^2 = 9^2$$

$$x - y$$

$$4^2 - 9^2 \checkmark$$

$$(4 \times 4) - (9 \times 9)$$

$$16 - 81$$


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$$- 65 \checkmark$$

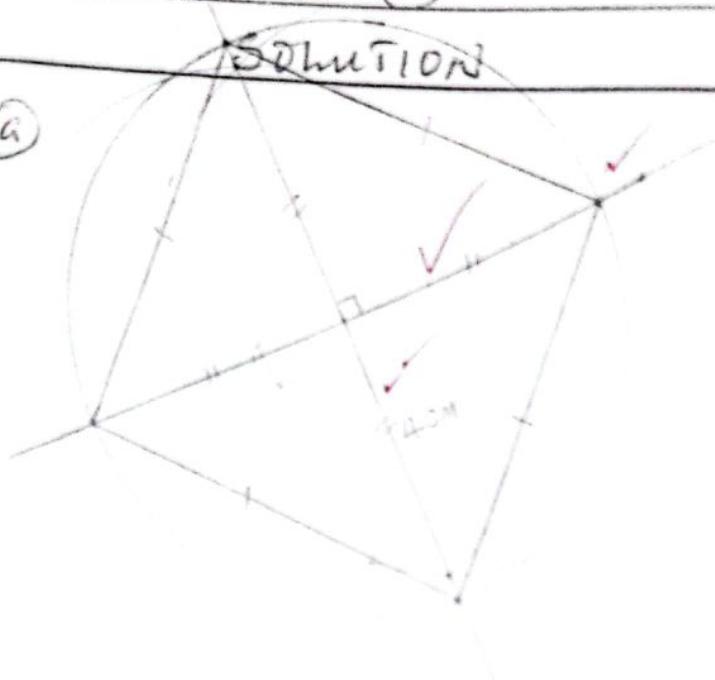
(11)

Qn	SOLUTION	MARK	COMMENT
21	<p>(a) <math>4K + K + 4 - (3K + 2) = 12 \checkmark</math></p> $\begin{aligned} 5K + 4 - 3K - 2 &= 12 \\ 5K - 3K + 4 - 2 &= 12 \\ 2K + 2 &= 12 \\ 2K + 2 - 2 &= 12 - 2 \\ 2K &= 10 \\ \frac{2K}{2} &= \frac{10}{2} \\ K &= 5 \checkmark \end{aligned}$	M <sub>1</sub>	For the correct formation of eqn
b.	$n(M) = \frac{3K+2 + K+4}{3K+K+2+4}$ $\begin{aligned} 3K+2+K+4 &= 3K+2+4+ \\ 3K+K+2+4 &= 3\times 5+2+5+4 \\ 4K+6 &= 15+2+9 \\ 4\times 5+6 &= 17+9 \\ 20+6 &= \underline{\underline{26}} \\ 26 &= 26 \checkmark \end{aligned}$	B <sub>1</sub>	For 26
	$n(E) = \frac{26 + 4K + (K-2)}{26 + 4\times 5 + (5-2)}$ $\begin{aligned} 26 + 4K + (K-2) &= 26 + 20 + 3 \\ 26 + 4\times 5 + (5-2) &= 26 + 23 \\ 26 + 20 + 3 &= \underline{\underline{49}} \\ 26 + 23 &= 49 \checkmark \end{aligned}$	B <sub>1</sub>	For $\frac{26}{49}$
	$\text{Prob} = \frac{26}{49} \checkmark$		

(12)

An

22(a)



Ans

Comment

B<sub>1</sub>for R<sub>1</sub>J<sub>1</sub>for J<sub>1</sub> and

E

for perpendicular

(b)

$5.5 \text{ cm}$   
 $5.6 \text{ cm}$   
 $5.7 \text{ cm}$

B<sub>1</sub>

(13)

Qn	SOLUTION	MARK	COMMENT
23 (a)	$  \begin{array}{r}  & 1 &   & \text{two} \\  & \times & 1 &   \text{two} \\  \hline  & 1 &   & \\  + & 1 &   & \checkmark \\  \hline  100 & 1 & \text{two} & \checkmark  \end{array}  $ $2 \div 2 = 1 \text{rd}$ $2 \div 2 = 1 \text{ro}$	M <sub>1</sub> A <sub>1</sub>	For correct method For 1001 two Reject 1001
(b) (i)	$2.954 \times 10^2$ $2.954 \times 10 \times 10$ $  \begin{array}{r}  2954 \\  \times 100 \\  \hline  2954  \end{array} \checkmark  $ $\frac{2954}{1000}$ $295.4$	M <sub>1</sub> A <sub>1</sub>	For multiplication For 295.4
(ii)	$2.954 \times 10^2$ $2.954 \times 10 \times 10$ $2.954 \times 100 \checkmark$ $295.400$ $295.4$		
(c)	$  \begin{array}{r}  3   (3n^2 + 15n) \\  n   (n^2 + 5n) \\  \hline    (n + 5)  \end{array} \checkmark  $ $3xn(n+5)$ $3n(n+5) \checkmark$	M <sub>1</sub> A <sub>1</sub>	For correct factorisation For $3n(n+5)$

(i)

Solution

Ans

$$\begin{aligned}
 24. (a) i) \text{Arc } BC &= \frac{1}{2}\pi r \\
 &= \frac{1}{2} \times \frac{22}{7} \times \frac{14}{7} \text{ cm} \checkmark \\
 &= 22 \text{ cm } \checkmark
 \end{aligned}$$

$$\begin{aligned}
 M_1 &\text{ for correct} \\
 &\text{substitution.} \\
 A_1 &\text{ for } 22 \text{ cm}
 \end{aligned}$$

$$\text{(ii) Arc } BC = \frac{1}{2} 2\pi r$$

$$\begin{aligned}
 &= \frac{1}{2} \times 2 \times \frac{22}{7} \times 7 \text{ cm} \checkmark \\
 &= \frac{1}{2} \times 2 \times \frac{22}{7} \times 7 \text{ cm}
 \end{aligned}$$

$$22 \text{ cm } \checkmark A_1$$

Area of a trapezium

$$\begin{aligned}
 A &= \frac{1}{2} h(a+b) & B_1 &\text{ for } 119 \text{ cm}^2 \\
 A &= \frac{1}{2} \times 7 \text{ cm} (14 \text{ cm} + 20 \text{ cm}) & B_1 &\text{ for } 77 \text{ cm}^2 \\
 A &= \frac{1}{2} \text{ cm} \times 34 \text{ cm} & B_1 &\text{ for } 142 \text{ cm}^2 \\
 A &= 119 \text{ cm}^2 & &
 \end{aligned}$$

Area of the semi circle

$$\begin{aligned}
 A &= \frac{1}{2} \pi r^2 \\
 A &= \frac{1}{2} \times \frac{22}{7} \times 7 \text{ cm} \times 7 \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 A &= 11 \times 7 \text{ cm}^2 \\
 A &= 77 \text{ cm}^2 \checkmark
 \end{aligned}$$

Area of the shaded part.

$$\begin{aligned}
 &119 \text{ cm}^2 \\
 &- 77 \text{ cm}^2 \\
 &42 \text{ cm}^2 \checkmark
 \end{aligned}$$

Qn	SOLUTION	MATH	Comment
25	<p>① <u>No of pupils who are present</u></p> $\frac{3}{4} \times 360$ $270 \text{ pupils}$	B <sub>1</sub>	For 180 girls
	<p><u>No of girls present</u></p> $\frac{2}{3} \times 270$ $2 \times 90$ $180 \text{ girls } \checkmark$	B <sub>1</sub>	For 30 girls
	<p><u>No of pupils who are absent</u></p> $\frac{1}{4} \times 360$ $90 \text{ pupils}$	M <sub>1</sub>	For addition
	<p><u>No of girls absent</u></p> $\frac{1}{3} \times 90$ $30 \text{ girls } \checkmark$	A <sub>7</sub>	For 210 girls No
	<p><u>Total number of girls</u></p> $180$ $+ 30$ $\hline 210 \text{ girls } \checkmark$		<p>EXPECTED TIME</p> <p>H min</p> $\frac{11}{12} \frac{30}{00} = 32$
			<p>Time used</p> <p>H mins</p> <p>9 30</p> <del>8 00</del> $\frac{1}{12} \frac{30}{30} = 1\frac{1}{2} \text{ hr}$
			<p>Remaining H min</p> $\frac{3}{12} \frac{30}{30} = 2 \text{ hrs}$
			<p>Remaining H min</p> $\frac{2}{12} \frac{00}{30} = 1\frac{1}{2} \text{ hrs}$
			<p>D = S x t <del>40</del> <math>\times 1\frac{1}{2}</math>  <del>t</del> = <math>\frac{60}{60}</math></p>
			<p>Remaining <math>\frac{135}{60} = 75</math></p>
			<p>Speed <math>\frac{D}{t} = \frac{75}{1\frac{1}{2}} = 250</math></p>
	<p>② <u>No of girls present</u></p> $\frac{2}{3} \times \frac{3}{4} \times 360$ $\frac{2}{3} \times \frac{3}{4} \times 360$ $180 \text{ girls } \checkmark (B_1)$		

(a)

SOLUTION

Number of girls absent

$$\frac{1}{3} \times \frac{1}{4} \times 360$$

$$= \frac{30}{90}$$

$$\frac{1}{3} \times \frac{1}{4} \times 360$$

$$30 \text{ girls } \checkmark \text{ (B1)}$$

Total number of girls

$$180 \checkmark \text{ (M1)}$$

$$+ 30$$

$$\hline 210 \text{ girls } \checkmark \text{ (A1)}$$

(iii) No of girls

$$\left( \frac{2}{3} \times \frac{3}{4} \times 360 \right) + \left( \frac{1}{3} \times \frac{1}{4} \times 360 \right)$$

$$\left( \frac{2}{3} \times \frac{3}{4} \times 360 \right) + \left( \frac{1}{3} \times \frac{1}{4} \times 360 \right)$$

$$(2 \times 90) + \left( \frac{1}{3} \times 90 \right)$$

$$180 + 30 \checkmark \text{ (M1)}$$

$$210 \text{ girls } \checkmark \text{ (A1)}$$

(b)

$$\begin{array}{r} 360 \\ - 210 \\ \hline 150 \end{array} \checkmark$$

$$150 \text{ boys } \checkmark$$

M1 For subtraction

A1 For 150

$$\left( \frac{1}{3} \times \frac{3}{4} \times 360 \right) + \left( \frac{2}{3} \times \frac{1}{4} \times 360 \right)$$

$$\left( \frac{1}{3} \times \frac{3}{4} \times 360 \right) + \left( \frac{2}{3} \times \frac{1}{4} \times 360 \right)$$

$$90 + 60 \checkmark \text{ (M1)}$$

$$150 \text{ boys } \checkmark \text{ (A1)}$$

(17)

Qn.	SOLUTION	MARK	COMMENT								
26 (a)	<p><u>weight of 140 litres</u>  <math>(65 - 5) \text{ kg}</math>  <math>= 60 \text{ kg} \checkmark</math></p>	B <sub>1</sub>	For 60kg								
	<p><u>weight of 20 litres</u>  <math>\frac{1}{3} \times 60</math>  <math>30 \text{ kg} \checkmark</math></p>	B <sub>1</sub>	For 30kg								
(b)	<p><u>Weight of milk</u>  <math>\frac{1}{3} \times 60 \text{ kg}</math>  <math>\frac{1}{3} \times 20</math>  <math>\frac{1}{3} \times 60 \text{ kg}</math>  <math>20 \text{ kg} \checkmark</math></p>	B <sub>1</sub> M <sub>1</sub> A <sub>1</sub>	For 20kg For addition For 25kg								
	<p><u>weight of the tank</u>  <math>(20 + 5) \text{ kg} \checkmark</math>  <math>25 \text{ kg} \checkmark</math></p>										
27 (a)	<table border="1"> <tr> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>sum</th> </tr> <tr> <td><math>n-4</math></td> <td><math>n-2</math></td> <td><math>n</math></td> <td>78</td> </tr> </table> $n-4 + n-2 + n = 78 \checkmark$ $n+n+n-4-2 = 78$ $3n-6 = 78$ $3n-6+6 = 78+6$ $3n = 84$ $\frac{3n}{3} = \frac{84}{3}$ $n = 28 \checkmark$	1st	2nd	3rd	sum	$n-4$	$n-2$	$n$	78	M <sub>1</sub> A <sub>1</sub> B <sub>1</sub>	For the correct formation of equation. For 28. For 24, 26 and 28
1st	2nd	3rd	sum								
$n-4$	$n-2$	$n$	78								

Qn	SOLUTION	mark	comment	Qn												
18	<table border="1"> <tr> <td>1st No</td><td>2nd No</td><td>3rd no</td></tr> <tr> <td><math>n-4</math></td><td><math>n-2</math></td><td><math>n=28</math></td></tr> <tr> <td><math>28-4</math></td><td><math>28-2</math></td><td></td></tr> <tr> <td>24</td><td>26</td><td></td></tr> </table>	1st No	2nd No	3rd no	$n-4$	$n-2$	$n=28$	$28-4$	$28-2$		24	26				
1st No	2nd No	3rd no														
$n-4$	$n-2$	$n=28$														
$28-4$	$28-2$															
24	26															
	The numbers are 24, 26 and 28 ✓															
(b)	<p>Product = <math>24 \times 28</math></p> <p>①</p> $  \begin{array}{r}  24 \\  \times 28 \\  \hline  192 \\  + 48 \\  \hline  672  \end{array} \checkmark  $	M <sub>1</sub>	for correct method													
		A <sub>1</sub>	For 672													
11	<p>②</p> $  \begin{array}{ c c c c c}  \hline  & 2 & 4 & x & \\  \hline  0 &   & 0 &   & 2 \\  \hline  4 &   & 0 & 8 & 2 \\  \hline  1 &   & 6 & 3 & 8 \\  \hline  6 &   & 1 & 6 & 3 \\  \hline  & 7 & 2 & & \\  \hline  \end{array}  $ $\sqrt{M_1}$															
	$24 \times 28 = 672 \checkmark(A_1)$															
28	<u>Time taken before breaking down</u>	B <sub>1</sub>	For $1\frac{1}{2}$ h .													
	$  \begin{array}{r}  \text{Hrs} \quad \text{min} \\  \hline  9 \quad 30 \\  - \\  \hline  8 \quad 00 \\  \hline  1 \quad 30  \end{array}  $		Time taken before breaking down.													
		B <sub>1</sub>	For 60km													
	It took $1\frac{1}{2}$ hours ✓	B <sub>1</sub>	For $1\frac{1}{2}$ hours													
		B <sub>1</sub>	Time left.													
		B <sub>1</sub>	For 75km													
		B <sub>1</sub>	For 50km/h													

Qn

## SOLUTION

MATH

Comments

Distance covered before breaking down.

$$S = 40 \text{ km/h}$$

$$T = 1\frac{1}{2} \text{ h}$$

$$D = ?$$

$$D = S \times T$$

$$D = 40 \text{ km/h} \times 1\frac{1}{2} \text{ h}$$

$$D = \frac{40 \text{ km}}{\text{h}} \times \frac{3}{2} \text{ h}$$

$$D = 60 \text{ km} \checkmark$$

B9

Distance remaining to be covered.

$$\begin{array}{r} 135 \text{ Km} \\ - 60 \text{ Km} \\ \hline 75 \text{ Km} \checkmark \end{array}$$

Ending time for the repair

$$\begin{array}{r} 9 \ 30 \\ + \ 30 \\ \hline 10:00 \text{ a.m.} \end{array}$$

Time needed

hrs	min
-----	-----

11	30
----	----

$$\begin{array}{r} - 10 \ 00 \\ \hline 1 \ 30 \checkmark \end{array}$$

$$T = \underline{\underline{1\frac{1}{2} \text{ hours}}}$$

$$D = 75 \text{ Km}$$

$$T = 1\frac{1}{2} \text{ h}$$

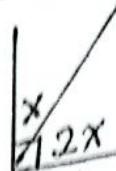
$$S = ?$$

# SOLUTION

Qn

30

(b) (i)



$$x + 2x = 90^\circ \checkmark$$

$$3x = 90^\circ$$

$$\frac{3x}{3} = \frac{90^\circ}{3}$$

$$\frac{3x}{3} = \frac{90}{3}$$

$$x = 30^\circ \checkmark$$


---

M<sub>1</sub>

For correct  
method

for 30°

A<sub>1</sub>

(ii)

$$\frac{1}{2} = 1:2$$

$$\text{Total} = 1+2=3$$

wh

$$\begin{aligned} \frac{1}{3} \times 90^\circ &= 30^\circ \\ \frac{2}{3} \times 90^\circ &= 60^\circ \\ \frac{1}{3} \times 90^\circ &= 30^\circ \checkmark \end{aligned}$$

It is 30°

---

(iii)

$$1:2 = 1+2=3$$

3 parts rep 90°

$$\begin{aligned} 1 \text{ part rep } &\frac{90^\circ}{3} \\ &= 30^\circ \checkmark \end{aligned}$$

$$1 \text{ part rep } 30^\circ \checkmark$$

(iv) Let the angle be x

$$x = \frac{1}{2}(90^\circ - x) \checkmark$$

$$2x = (90^\circ - x) \times 2$$

$$2x = 90 - x$$

$$2x + x = 90 - x + x$$

$$3x = 90$$

$$\frac{3x}{3} = \frac{90}{3}$$

$$x = 30^\circ \checkmark$$

(21)

Qn	Solution	Marks	Comment									
29	$\text{b) } \frac{1}{2}(4a+2b) - \frac{1}{2}(6a-3b)$ $(\frac{1}{2} \times 4a + \frac{1}{2} \times 2b) - (\frac{1}{2} \times 6a - \frac{1}{2} \times 3b)$ $(2a+b) - (3a - b)$ $2a+b - 3a+b \checkmark$ $2a - 2a + b \checkmark$ $b \checkmark$	M1 M1 A1	For correct removal of brackets For $2b$ or $0+2b$									
30.	<p>(i)</p> <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>Int</td> <td>Ext</td> <td>Sum</td> </tr> <tr> <td>180-45</td> <td>45</td> <td>180</td> </tr> <tr> <td>135</td> <td></td> <td></td> </tr> </table> <p>No of sides = <math>\frac{360^\circ}{45^\circ}</math>  <math display="block">= 8 \text{ sides} \checkmark</math></p>	Int	Ext	Sum	180-45	45	180	135			B1 M1 A1	For 8 sides For correct substitution For $1080^\circ$
Int	Ext	Sum										
180-45	45	180										
135												
	<p>Int Ls sum = <math>180^\circ(n-2)</math></p> <p>① <math>180(8-2) \checkmark</math></p> $180^\circ \times 6$ $1080^\circ \checkmark$											
(ii)	<p>Int Ls sum = <math>90^\circ(2n-4)</math></p> $= 90^\circ(2 \times 8 - 4)$ $90^\circ(16-4)$ $90 \times 12$ $1080^\circ \checkmark$											
(iii)	<p>Int Ls sum = Int L X No of sides</p> $135 \times 8$ $1080^\circ \checkmark$											

(20)

Qn

## SOLUTION

MATH

Common

$$S = D \div T$$

$$S = 75 \text{ km} \div 1\frac{1}{2} \text{ hr}$$

$$S = 75 \text{ km} \div \frac{3}{2} \text{ hr}$$

$$S = \frac{25}{75} \text{ km} \times \frac{2}{3} \text{ hr}$$

$$S = 50 \text{ km/h} \checkmark$$

29

$$\textcircled{a} \quad 3(y-1) - 6(y-2) = 24$$

$$3y - 3 - 6y + 12 = 24 \checkmark$$

$$3y - 6y - 3 + 12 = 24$$

$$-3y + 9 = 24$$

$$-3y + 9 - 9 = 24 - 9 \checkmark$$

$$-3y = 15$$

$$\frac{-3y}{-3} = \frac{15}{-3}$$

$$y = -5 \checkmark$$

M<sub>1</sub>For correct  
removal of  
bracketsM<sub>1</sub>For final  
collection of  
like termsA<sub>1</sub>

For -5

(ii)

$$3(y-1) - 6(y-2) = 24$$

$$\frac{3(y-1)}{3} - \frac{6(y-2)}{3} = \frac{24}{3}$$

$$(y-1) - 2(y-2) = 8$$

$$y - 1 - 2y + 4 = 8$$

$$y - 2y - 1 + 4 = 8 \quad \textcircled{M}_1$$

$$-y + 3 = 8$$

$$-y + 3 - 3 = 8 - 3$$

$$-y = 5$$

$$\frac{-y}{-1} = \frac{5}{-1}$$

$$y = -5 \checkmark \text{(A}_1\text{)}$$

Qm	SOLUTION	MK	COMMENT
31	<p>(a) <math>1\text{ US\\$} = \text{Ugsh } 3600</math></p> $\text{US\$}28 = \text{Ugsh } 3600 \times 28$ $  \begin{array}{r}  3600 \\  \times 28 \\  \hline  28800 \\  +7200 \\  \hline  100,800  \end{array} \checkmark  $ <p><u>Ugsh 100,800</u> ✓</p>	M <sub>1</sub>	For addition
		A <sub>1</sub>	For Ugsh 100800 <u>Reject</u> Wrong units
(b)	$\text{£}1 = \text{Ugsh } 4800$ $\text{£}300 = \text{Ugsh } 4800 \times 300$ $  \begin{array}{r}  4800 \\  \times 300 \\  \hline  0000 \\  0000 \\  14400  \end{array}  $ <p><u>Ugsh 1,440,000</u></p>	B <sub>1</sub>	for Ugsh 1440 000
		M <sub>1</sub>	for correct division
		A <sub>1</sub>	For Ksh 40 000 <u>Reject</u> Wrong units
	$\text{Ugsh } 36 = \text{Ksh } 1$ $\text{Ugsh } 1 = \text{Ksh } \frac{1}{36} \times$ $  \begin{array}{r}  40000 \\  \times \frac{1}{36} \\  \hline  1  \end{array}  $ <p><u>Ksh 40,000</u> ✓</p>		
	$  \begin{array}{r}  4800 \times 300 \\  \hline  36 \\  \hline  12  \end{array}  $ <p><u>4800 × 300</u> ✓ M<sub>1</sub></p> <p><u>Ksh 40,000</u> ✓ A<sub>1</sub></p>		

Ques	Solution	Ans	Comment
32.	<p>(a)</p> $  \begin{array}{r}  100 \\  - 70 \\  \hline  30 \text{ pounds}  \end{array}  $	2	
	<p>(b) (i) Thursday</p> <p>(ii) 7 hours</p>		
	<p>(c) Average = <math>\frac{\text{sum of data}}{\text{No. of data}}</math></p> $  \begin{array}{r}  100-80 = 20 \\  100-60 = 40 \\  100-90 = 10 \\  100-40 = 60 \\  100-70 = 30  \end{array}  $		
	$  \begin{array}{r}  a \quad 180 \text{ girls} \quad B_1 \\  30 \text{ girls} \quad B_1 \\  180+30 \quad M_1 \\  \hline  210 \text{ girls} \quad A_1  \end{array}  $		
	$  \begin{array}{r}  b \quad 360 \\  - 210 \\  \hline  150 \text{ bags} \quad M  \end{array}  $		
	$  \begin{array}{r}  c \quad 60 \text{ kg} \quad B_1 \\  30 \text{ kg} \quad B_1 \\  \hline  20 \text{ kg} \quad B_1 \\  \cancel{25} \text{ kg} \\  20+5 \quad M_1  \end{array}  $		
	$  \begin{array}{r}  Av = \frac{20+40+10+60+30}{5} \\  Av = \frac{160}{5} \\  Av = 32  \end{array}  $	✓ A1	2A A1
	$  \begin{array}{r}  2 + \frac{1}{3}k = 5 \\  6 + k = 15  \end{array}  $		= END =